1. GEOGRAPHICAL VARIATION IN THE NAMAQUA SANDGROUSE *PTEROCLES NAMAQUA* (GMELIN)

The Namaqua Sandgrouse *Pterocles namaqua* (Gmelin), 1789: Namaqua country, is a locally common, gregarious species of the desertic regions of south-western Africa. While in the main resident, the populations in many parts of the species' range are given to movement in the non-breeding season, the full nature of which is still not known. The American systematic Rudolphe Mayer de Schauensee, *Proceedings of the Academy of Natural Sciences of Philadelphia*, vol. lxxxiii, 1931, p. 441, was the first worker to demonstrate the existence of subspecific variation in the species, when he arranged the populations into two races (*P.n.namaqua* and *P.n.ngami* de Schauensee, 1931: 25 miles north-west of Lake Ngami, northern Bechuanaland Protectorate) on the basis of a study of the totally inadequate material of five skins (*sic!*). The recommendations of de Schauensee have not been widely accepted, and following the opinion of White, *Ibis*, vol. 93, 3, 1951, p. 462,
White and Moreau, *loc. cit.*, suggest that in *P. diffusus* the bill is always flesh coloured, but this is not so. The bill in *P. diffusus* changes to black in the breeding season, just as in the case of the European House Sparrow *Passer domesticus* (Linnaeus), though in this latter species only the male assumes a wholly black bill. In the case of *P. d. stygiceps* the mandibles start to turn black in the latter half of July and the early part of August.

7. POLYTPIC VARIATION IN THE VIOLET-EARED WAX-BILL GRANATINA GRANATINA (LINNAEUS) OF SOUTHERN AFRICA

The Violet-eared Waxbill *Granatina granatina* (Linnaeus) is a widely distributed and relatively common estrildine species of the south-west African biota, its range being centred on the thornveld savannas of the interior and arid west of sub-continental South Africa. In the west of its range it occurs north in the littoral of Angola to about Benguela, but does not extend south of the Orange River. The species, which is much sought after for aviaries, occurs in small flocks and family parties in light thorn woodland, favouring matted tangles of thorns and grass, being attracted to concentrations of such herbage bordering primitive cultivations.

*G. granatina* is currently believed to be monotypic, and nowhere in the literature at my disposal has it been suggested that demonstrable geographical variation exists. Comparison of material collected in South-West Africa in May-June, 1959, with that already in our collections from the Transvaal revealed quite marked differences between the two groups of populations, and suggested the existence of at least two nomenclaturally recognisable races. Through the kindness of the Directors of the East London Museum, the Transvaal Museum (through Mr. O. P. M. Prozesky), the National Museum of Southern Rhodesia, Bulawayo (through Mr. M. P. Stuart Irwin), and the Chicago Natural History Museum, U.S.A. (through Mr. Melvin A. Traylor), a series of just over one hundred skins (106) has been available for critical study. Careful examination of this adequate material, 90 per cent. of which has been obtained since 1950, confirms the existence of subspecific variation in *G. granatina*: a pale race of the arid west of southern Africa, which extends south-eastwards into the Kalahari Desert, Bechuanaland Protectorate, and a darker (nominate) one lying to the east and north-east of the pale form.

*Fringilla granatina* Linnaeus, *Systema Naturae*, 12th edition, i, 1766, p. 319, is based on the Red and Blue Brazilian Finch of
Edwards, *Nat. Hist. Birds*, iv, 1751, t. 191. The species does not, of course, occur in the wild state in the Americas, and Sclater, *Syst. Av. Aethiop.*, part ii, 1930, p. 806, proposed Angola as the restricted type-locality of the species. No specimens from Angola were available in South African collections, but through the great kindness of Mr. Melvin Traylor, of the Chicago Natural History Museum, a series of 3 ♂♂, 4 ♀♀ from Huila, in southern Angola, has been made available for this study. The Huila topotypes of *G.granatina* show that it is the dark eastern and north-eastern populations that constitute the nominotypical race, and the pale western and south-western ones the new form.

In the north-western South-West African populations of *G.granatina* the adult male has the upper-parts a dusty Russet or Hazel (pls. xv, xiv), the lower back and rump usually with an overlay of a colour close to Hair Brown (pl. xlvi), the face slightly lighter than Amethyst Violet (pl. xi), and the blue of the lower rump, upper and under tail-coverts close to Smalt Blue (pl. ix) (all colours from Ridgway, *loc. cit.*). The female lacks the dark, rich colouration of the male, being buffy white washed with Pinkish Cinnamon (pl. xxix) on the under-parts, while the head-top is Sayal Brown (pl. xxix) and the back Hair Brown, and only the rump and upper tail-coverts are blue. The wings in males measure from 57-61 and the tails from 75-82 mm. The populations the individuals of which possess these characters (hereunder named *G.g.siccata*, subsp. nov.) range from the Kaokoveld, Ovamboland, Damara land and eastern Great Namaqualand in South-West Africa, and across the Kalahari Desert of south-western and southern Bechuanaland Protectorate (as far east as Lephepe).

Nine adult males and females from the district of Otjiwarongo and a single male from Okanjande, in north-eastern Damara land, reveal an interesting shift towards darker general colouration in the males in the populations of north-eastern South-West Africa. Of six adult males, one is virtually indistinguishable from topotypes of *G.g.granatina*, the other five resembling the gamut of the paler western populations. Still further north-east, in the Caprivi Strip, the populations seem to consist almost entirely of dark individuals.

In the darker and richer nominate race the males have the upper-parts near Chestnut (pl. ii), the face pure Amethyst Violet, and the blue of the lower rump, upper and under tail-coverts Helvetia Blue (pl. ix). The females have the head-top Hazel (pl. xiv) and the back umber, while the under-parts are markedly more ochraceous tinged throughout, the breast often quite rusty. There is no significant
difference in wing-length (♂ 55.5-60), but a marked tendency to have a shorter tail (♂ 66.5-77 mm.). The range of \textit{G.g.granatina} extends from southern Angola and north-eastern South-West Africa to western Northern Rhodesia (including Barotseland), south-eastwards to northern and eastern Bechuanaland, Southern Rhodesia, the Transvaal, Orange Free State and Griqualand West, Sul do Save, southern Portuguese East Africa and Natal.

The adult males of \textit{G.g.granatina} show an interesting range of dorsal colour variation, and it is actually possible by ignoring the locality data on the labels to arrange the material into two ostensible races. In the normally coloured male of \textit{G.g.granatina} the head-top and mantle are of a colour slightly warmer than Chestnut (in my formal arrangement of the races I have given it as Chestnut/Sanford's Brown), and the lower back and scapulars are washed with olive-brown. In single examples from a variety of widely scattered localities in the interior of the species' range the head-top and mantle are more fox red (Waterford, Bulawayo, Southern Rhodesia; Rooiport, near Kimberley, Northern Cape; Farm Klipkop, near Otjiwarongo, north-eastern South-West Africa, etc., are localities), being of a colour between Hazel and Cinnamon Rufous, as against the Chestnut of the norm. Such vulpine examples of \textit{G.g.granatina} occur sparsely and sporadically within populations of normally coloured birds. There is also a measure of variation in the extent to which the back and scapulars are overlaid withumber brown, while odd males are hen-feathered on the upper-parts, though otherwise normal.

The polytypic variation exhibited by the populations of the Violet-eared Waxbill is simple and in accord with that normally encountered, \textit{i.e.}, a pale race in the arid interior and semi-deserts of the west, and a darker northern and eastern one living in association with moister conditions. The nomenclature, characters and ranges of the two races of \textit{G.granatina} are as hereunder given:

\textbf{(a) Granatina granatina siecata, subsp.nov.}


\textit{Description:} Adult male: Frons violet-blue; upper-parts dusty Russet or Hazel (SO-7-6°—SO-7-7° \textit{vide} Villalobos, \textit{Colour Atlas}, 1947), the lower back and scapulars often with an overlay of a colour close to Hair Brown; lower rump, upper and under tail-coverts Smalt Blue, occasionally suffused with Amethyst Violet over the rump; supercilia and cheeks Amethyst Violet/Hortense Violet.
Under-parts: chin and upper throat sooty black; lower throat, breast, sides of body and flanks Chestnut/Russet; abdomen sooty black. Female. Frons dusty violet-blue; head-top close to Sayal Brown; mantle Hair Brown; lower rump and upper tail-coverts Dull Violet Blue (pl. xxiv). Under-parts buffy white, the lower throat, breast, body-sides and flanks variably overlaid with Pinkish Cinnamon.

**Measurements:** Wings of 10♂♂ 57-61 (58.8), tails 75-82 (78.6), 10♀♀ wings 55.5-59 (57.4) mm.

**Material examined:** 60. South-West Africa (Orupembe, 1♀; 26 miles south of Okaukwejo, 1♂; Farm Kenilworth, Otjiwarongo, 1♂; Farm Klipkop, 18 miles south of Otjiwarongo, 4♂♂, 3♀♀; 3 juvs.; Okahandja, 1♂; Farm Quickborn, Okahandja, 1♂; Okandu, Okahandja, 5♂♂, 1♀; Farm Elizabethhill, Okahandja, 11♂♂, 3♀♀, 1 juv.; Farm Hoffnung, 10 miles east of Windhoek, 4♂♂, 9♀♀, 6 juvs.; Gobabis, 1♂). Bechuanaland Protectorate (Bosho Bohulu Pan, 1♂; 10 miles west of Lephepe, 1♂, 1♀; Hukuntsi, 1 juv.). Northern Cape Province (97 miles on the Kuruman-Askham road, 1♂). *G.g.siccata* ≈ *G.g.granatina*: 1. Bechuanaland Protectorate (Kakia, 1♂).

**Measurements of the Type:** Wing 58, tail 78 mm.

**Range:** South-West Africa in the Kaokoveld, Ovamboland, Damaraland and eastern Great Namaqualand (apparently absent from the Namib Desert and most of Great Namaqualand), the Kalahari Desert, Bechuanaland Protectorate, and the northern Cape Province (except Griqualand West). Intergrades to the north-east and east of its stated range with the following subspecies.

**Remarks:** The name of the new taxon is from the Latin *siccus*, dry, in allusion to the arid conditions under which it lives.

(b) **Granatina granatina granatina** (Linnaeus)


Similar to *G.g.siccata* as defined above but darker coloured in both sexes. Male darker and richer on the upper-parts (back about Chestnut/Sanford's Brown (SO-4-8°), as against Russet or Hazel); blue of lower rump, upper and under tail-coverts slightly deeper (Helvetia Blue); supercilia and cheeks slightly darker (Amethyst Violet). Under-parts Chestnut. Female. Darker on head-top (Hazel)
and mantle, which is close to Saccardo’s Umber (pl. xxix). Under-parts much more ochraceous or rusty than in G.g.siccata, the lower throat, breast, body-sides and flanks strongly washed with Cinnamon Buff or Clay Color (pl. xxix). Juvenile. Darker and richer through-out. Similar in size, but tail averaging rather shorter in the adult male.

**Measurements:** Wings of 10 ♂♂ 55.5-60 (57.5), tails 66.5-77 (78.6), 10 ♀♀ wings 56-58 (56.7) mm.

**Material examined:** 45. Angola (Huila, 3 ♂♂, 4 ♀♀). Northern Rhodesia (Mashi I, Barotseland, 1 ♂; Nangwesi, Barotseland, 1 ♂; Namwala, 2 ♂♂; Lusu Rapids, Sesseke district, 1 ♀). South-West Africa (Linyanti, Caprivi, 1 ♀; Okanjande, 1 ♂; Kenilworth Farm, Otjiwarongo, 1 ♂). Bechuanaland Protectorate (40 miles south of Nata, 1 ♂; 1 mile south of Francistown, 1 ♂; Kakia, 1 ♂). Southern Rhodesia (Selukwe, 1 ♂; Bulawayo, 4 ♂♂, 1 ♀; Umguza Forest Reserve, 2 ♂♂; Ingwesi Ranch, Syringa, 1 ♂, 1 ♀; Wankie Game Reserve, 2 ♂♂; Central Estates, Umvuma, 2 ♂♂ (one in ♀ dress); Nala Farm, Turk Mine, 1 ♀; Chatsworth, 1 ♀). Transvaal (Pretoria, 1 ♂, 1 ♀; Warmbaths, Waterberg, 1 ♂; Zoutpansberg, 2 ♂♂, 1 juv.; Mapagone, 1 ♂; “Transvaal”, 2 ♂♂, 1 ♀). Northern Cape Province (Rooiport Game Farm, near Kimberley, 1 ♂).

**Type:** None. Based on the Edwards reference quoted above.

**Range:** Southern Angola (in the littoral recorded as far north as Benguela), north-eastern South-West Africa (west to Otavi and the Waterberg), western Northern Rhodesia, including Barotseland (east to Namwala and north to Balovale and the Manyinga River), northern and eastern Bechuanaland Protectorate, Southern Rhodesia (except eastern highlands), eastern, northern and western Transvaal, Orange Free State and adjacent northern Cape Province (Griqualand West), Natal and southern Portuguese East Africa (rare).

8. **A NEW SUBSPECIES OF SERINUS ATROGULARIS SMITH FROM SOUTHERN AFRICA**

The small Black-throated Canary *Serinus atrogularis* Smith is a highly polytypic species, in which five or six races have already been described by workers from the South African sub-continent. The ranges of these races are still very imperfectly known and understood, and the southern populations are in urgent need of a modern revision backed by adequate specially collected material. One of the races accorded an extensive distribution in our current taxonomic treatment of the subspecific variation in *S.atrogularis* is the